

Claims

1. A valve train comprising cam switching typically for an intermittent control
5 of a four-cycle internal combustion engine comprising following features and components:

- a splined shaft comprising an axial outer gearing and one cam block
10 per cylinder, said cam block comprising an inner gearing through which the cam block can be axially displaced and connected rotationally fast to the splined shaft;

- the cam block comprising per gas exchange valve two cams arranged adjacent to each other and having identical base circle diameters and unequal lifts;
15

- on each end of the cam block is arranged a cylindrical end piece, and a mirror-symmetrical displacing groove is made radially in the periphery of each cylindrical end piece;
20

- a housing-mounted actuator pin for radial insertion into each displacing groove, the cam block being able to reciprocate axially through a cooperation of the actuator pins and the displacing grooves when the engine is running,
25

wherein

the displacing grooves possess an accelerating flank comprising an impact ramp whose constant, gentle ascending gradient causes a correspondingly constant, low initial axial speed of the cam block and a feeble
30 impact force of the actuator pins.

2. A valve train of claim 1, wherein the ascending gradient of the impact ramp is preferably situated between 5 and 50 μm per degree,
3. A valve train of claim 2, wherein an axial clearance of the actuator pins in the displacing grooves is, for instance, 1.2 mm in a run-in region, decreases to, for instance, 0.1 mm up to a change-over point between the accelerating flank and a braking flank, and increases up to a run-out region to, for instance, 0.2 mm.
4. A valve train of claim 3, wherein a base circle region of the cams extends from a beginning of the impact ramp to an end of a braking region.
5. A valve train of claim 4, wherein the displacing grooves on the periphery of the cylindrical end pieces start with a depth run-in region and end with a depth run-out region and that a depth region having a constant depth is situated between said depth run-in and run-out regions.
6. A valve train of claim 5, wherein the depth region begins before an impact region of the accelerating flank and extends up to the end of the braking region.